

304 the operation, was compelled to rest and recuperate, the bodies of the youths who were assisting at the rite were tattooed gratis by the *tuhuna*.
 [784] Everyone in the tattooing house was *tapu*, being restricted from any contact with outsiders, particularly with women. There were certain food restrictions for the *opou*, the object of which appears to have been to lessen the inflammation and fever resulting from the operation.

The youth was held by assistants of the *tuhuna patu tiki*, who outlined the designs with charcoal. These outlined designs the *tuhuna* himself sometimes filled in; but at other times he would leave that part of the work to his assistants or apprentices. The pigment used was made by
 • [384] mixing soot from the smoke of burnt candlenut kernels with water or coconut oil. The whole process of making the pigment, which was prepared in advance by the father of the boy, was very *tapu*. The implements of the
 [413] *tuhuna* consisted of a set of small bone instruments with fine saw-teeth at one end, which were inserted in a piece of reed stem or bamboo to serve as a handle, and a small baton held in the right hand, which was used to tap the instrument. As the tattooer worked, he accompanied the rhythm
 [533 755] of his tapping with a chant which was supposed to lessen the pain for the boy. (For examples of design see fig. 11, and Pl. II, c.)

[553] At the time of these rites the *ka'ioi* youths who were undergoing the operation with the *opou* always gave him a nickname which was known as the *pati'i*. These nicknames always referred to some personal peculiarity of the boy himself, or of his parents. The final completion of the tattooing was celebrated with a feast (see Festivals) at which the newly tattooed youths exhibited the beauty of their new designs.

Girls were tattooed between the ages of seven and twelve, in a small house erected for the purpose, the work being done simply, with less elaborate rites and without the participation of the *ka'ioi*.

MARRIAGE AND RELATIONSHIP BETWEEN THE SEXES

836 The freedom between the sexes during the years immediately following adolescence has been described in detail. (See The Tribe—Ka'ioi.) Porter says (24, p. 113):

Before marriage they [unmarried girls] are at liberty to indulge themselves with whom they please, but after marriage the right of disposing of them remains with the husband.

583 The transition from the period of *ka'ioi* freedom to permanent relationship with one of the other sex appears to have come either as a result
 848 of the birth of a child to a girl or young woman, in which case she and the child's father came together and lived as *ahana* and *vehine*, merely

constituted as important a part in the accomplishment of enterprises as the actual practice itself. In making a new thing such as a coffin, a canoe, or a house, a most important stage consisted in the consecration of the new thing after its completion by the recitation of the creation or generation chant, which linked the new product of man's handicraft with the beginnings and successive stages of creation, uniting the new thing made with all that had gone before, from the beginning of the world. In the work of food collecting, fishing, and harvesting, the final stage consisted in the offering of first fruits—a very important part, as it was instrumental in leading to further successful accomplishments of the same work. Such offerings of first fruits relieved the foods of *tapu* by giving the gods their share, thus releasing the rest for human consumption.

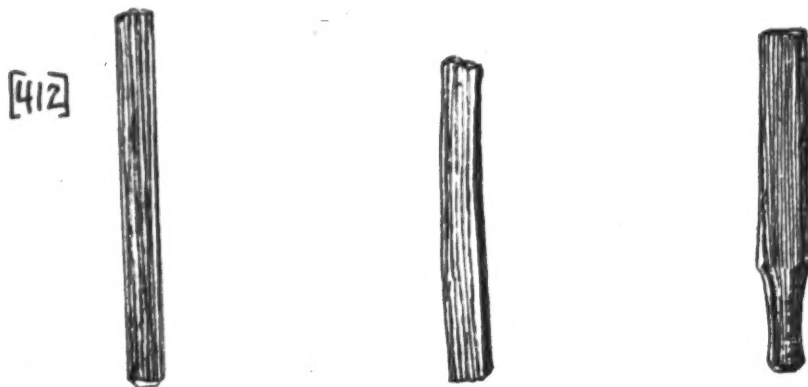
Lastly, the accomplishment of undertakings of every kind was celebrated always with feasting and merrymaking. These periods of consecrated activity were always followed by long periods of inactivity and repose.

WOODWORK

The materials utilized in woodwork were beams, boards, and posts of wood, and cords to lash them together. The tools employed were stone adzes, stone chisels, mallets, and the pump drill. Most of the cord (*aho*) and rope (*tou'a*) was sennit cord, made chiefly from coconut fiber (*kaha*)—*pu'u kaha* being the generic term for sennit cord bindings and *ke'e kaha* and *kaha patapata* terms applied to such cord when used in ornamental lashings. Each lashing had its name, as *humu o Tana-oo*, *Fiti nui*, *Fiti peka*, and professionals (*tuhuna pehe*) devoted themselves to adapting the designs, which were taken from string figures (*pehe*—see Games), and to applying them in ornamental lashings. In these lashings cords of different colors were combined, some of them being of the natural reddish-brown color and others stained in water, colored with red earth, or according to one informant, dyed with the juice of the fruit of the *pu'u peni* (?); some were dyed yellow with *ena* or black by being buried in mud, or (according to Linton) by being soaked in juice from the bark of the *maii* (*Terminalia* sp.) tree, or were smeared with a paste blackened with candlenut soot; and some were made white by soaking in water in which white earth (or perhaps lime) was mixed. The manufacture of cord for nets has been described in connection with net-making. (See Fishing.)

According to Linton's information, three-, four-, six-, seven-, and eight-strand rope was made, the three-strand (*tou'a*) and the four-strand (*fofii*) being the most common and the seven-strand being used for certain ceremonial purposes. It may be that the ceremonial significance of seven prevented the use of the seven-strand cordage for general purposes. In

287 says that *katea* (*Alyxia*) was used. According to this writer (15, p. 34),
 [824] the bark of *mi'o* was also sometimes used. The implements employed in making *tapa* consisted of a stone (*ke'a, kiva*), a wooden anvil (*tutua*) and

FIGURE 17.—Tapa beaters (*ike*).

the wooden beater (*ike*) (fig. 17). Cloth-making was a woman's industry.

The following simple and concise descriptions of making *tapa* in ancient times are translated and briefed from a manuscript written in the native dialect by Dordillon (9)—evidently copied from descriptions by a native:

The breadfruit tree was climbed and a branch cut off with a sharp stone. The bark was pulled from the branch with the teeth and beaten for a long time on a stone with the wooden beater. The fiber was then worked in fresh water with the hands, after which it was bundled up and carried into the house where it was left four days. Being then brought out, it was beaten again on a smooth beach boulder, then on a wooden anvil, after which it was put in the sun to dry. If the cloth were dyed (yellow *ena* furnished the only dye), it was soaked in the dye before drying. In the making of the ute cloth the stem of the paper mulberry plant is described as being cut down, peeled, and the bark put first in water and then beaten to remove the inside bark. The fiber was then left in the house for some time, after which it was beaten and felted together, rinsed, and the cloth dried by being stretched out in the sun with stones laid on the border to hold it.

Melville (23, pp. 172-173) describes cloth-making in Nuku Hiva as he witnessed it:

In the manufacture of the beautiful *tapa* generally worn on the Marquesan Islands, the preliminary operation consists in gathering a certain quantity of the young branches of the cloth-tree. The exterior green bark being pulled off as worthless, there remains a slender fibrous substance, which is carefully stripped from the stick, to which it closely adheres. When a sufficient quantity of it has been collected, the various strips are enveloped in a covering of large leaves, which the natives use precisely as we do wrapping-paper, and which are secured by a few turns of a

line passed around them. The package is then laid in the bed of some running stream, with a heavy stone placed over it, to prevent its being swept away. After it has remained for two or three days in this state, it is drawn out, and exposed, for a short time, to the action of the air, every distinct piece being attentively inspected, with a view of ascertaining whether it has yet been sufficiently affected by the operation. This is repeated again and again, until the desired result is obtained.

When the substance is in a proper state for the next process, it betrays evidences of incipient decomposition; the fibres are relaxed and softened, and rendered perfectly malleable. The different strips are now extended, one by one, in successive layers, upon some smooth surface—generally the prostrate trunk of a coconut tree—and the heap thus formed is subjected, at every new increase, to a moderate beating, with a sort of wooden mallet, leisurely applied. The mallet is made of a hard heavy wood resembling ebony, is about twelve inches in length, and perhaps two in breadth, with a rounded handle at one end, and in shape is the exact counterpart of one of our four-sided razor-strops. The flat surfaces of the implement are marked with shallow parallel indentations, varying in depth on the different sides, so as to be adapted to the several stages of the operation. These marks produce the corduroy sort of stripes discernible in the tappa in its finished state. After being beaten in the manner I have described, the material soon becomes blended in one mass, which moistened occasionally with water, is at intervals hammered out, by a kind of gold-beating process, to any degree of thinness required. In this way the cloth is easily made to vary in strength and thickness, so as to suit the numerous purposes to which it is applied.

When the operation last described has been concluded, the new-made tappa is spread out on the grass to bleach and dry, and soon comes of a dazzling whiteness. Sometimes, in the first stages of the manufacture, the substance is impregnated with a vegetable juice, which gives it a permanent color. A rich brown and a bright yellow are occasionally seen, but the simple taste of the Typee people inclines them to prefer the natural tint.

The types of dress for which bark cloth was used are described in the section on Dress and Personal Adornment.

MAT-MAKING

Mat making (*u'u moena*) was also an industry to which women devoted themselves. The pandanus mats for the bed-space, and the coconut mat used for thatching and for padding the bed-space were made by individuals or by groups of women, usually relatives, or in the family of chiefs by women who were known to be skilled in the art, who were summoned for the purpose. Thus, if a chiefess desired to have mats made she would summon a group of women whom, during the time of their labor, she would feed and house in a special shelter (*oho au*) built for the work. For fine mats the pandanus leaves were split into small strips (*henu*) with a small stick like a needle (*ake*). (See The Family.)

OTHER HOME INDUSTRIES

Basket-making was also a function of women, but it was an industry that was little developed and was practiced merely as an incidental house-

KAOA FISHING

The professional fishermen devoted themselves sometimes to catching the *kaoa*, a small fish which at certain times was very plentiful in the bays. The net (*upena kaoa*) used was small and could be handled by two men. It was let down on the bottom in shallow water. Then the men struck the water with their hands, driving the *kaoa* into the net. 226

SHARK FISHING

Catching the hammer-headed shark (*matake*) was a more elaborate undertaking. For this there was a special net called *upena fifiii*. This was a large, coarse net, the cords of which were made by women in the same manner as were those for the *upena*. The cords for the *fifiii* were dyed red with red earth. In the process of making them the heavy cord was rolled on a piece of wood rather than on the knee in the way that the *upena* cords were made. One margin of the net was anchored to the bottom, while the other was held up by floats on the surface. If the *tuhuna* observed *matake* passing a certain point, ten or twenty nets would be put out at this place at night, left there, and taken in with their catch next morning. The *matake* were caught and held in the meshes of the net by their gills. 226 [286] [386]

Sharks were sometimes caught by the following ingenious method: (Whether or not this is a recently introduced method I am uncertain—the use of knives would suggest that it has been introduced.) A number of men would go out in a canoe, one man at the bow dragging in the water a piece of meat on a cord. The others had nooses of cord ready, being seated along the sides of the canoe. When a shark came up, swimming alongside, scenting the meat, one or two nooses were slipped over the fore and hind part of his body, the cords pulled taut, and the shark was killed with knives before it could injure the canoe.

CATCHING OCTOPUS

There were several methods of catching octopus (*feke*). One was by diving with several sticks, thrusting one of these into the octopus in its hole, waiting a moment until it had begun to occupy its arms with this, then thrusting the other into it in the same way. When all the arms of the octopus were occupied with the sticks, the body was seized with the hands and dragged out of the hole. The animal was killed by a bite on the top of the head, after which the stomach was quickly turned inside out.

Again, a line with three hooks attached to it was sometimes used. Near the hooks a white stone that could be seen under water was tied. This

feasts did not come at fixed intervals but were regulated by the necessity for awaiting seasons of plenty. On all these occasions offerings were made at the tomb and at the sacred place of the local god and the sacred place was bedecked. If the man whose death was celebrated were of sufficiently high class, only chiefs were allowed to partake of the feast.

KOIKA OKE

Père Pierre describes feasting, the beating of drums and chanting in connection with the *ko'ika oke*, which, according to Dordillon (9), was celebrated to bring rain or to break a famine. For a month prior to this feast, sexual intercourse was prohibited; women were forbidden to make cloth, to amuse themselves, to bathe, anoint, or decorate themselves with flowers. The *tapu* was then lifted, these restrictions removed, and the memorial festival was celebrated with feasting and general rejoicing, including undoubtedly (though this is not stated) free indulgence of the sexual instincts. At this festival many games were played, such as top spinning and making of string figures. The clothes of chiefesses were orange and those of common women yellow, baked *ena* root being used as a dye for the orange and the raw root for the yellow. At this rite the sons and daughters of chiefly families and old men and women only might dance, and all danced naked. The feasting and dancing lasted from one to ten days (9).

KO'IKA VAIHOPU

Père Pierre (4) says that the *ko'ika vaihopu*, which was the second memorial festival, was the most famous of all. At this the participants chanted to the beating of drums and danced naked, old men and women being smeared with white earth so as to exaggerate their decrepitude. Men, women, and children were brought as though to be sacrificed as human victims, being carried entirely nude. They were not sacrificed, however, but in pantomime imitated the throes of death. Others impersonated the type of spirits called *fanaua* (see Spirits) which caused women to die in childbirth. Beyond this point the reverend father could not bring himself to continue his description, leaving it with the words "monstrosities," and "truly infernal bacchanals."

According to a Nuku Hiva informant, one feature of the *ko'ika vaihopu* was the exhibition of youths and maids. Before the feast they bleached their skins. They were dressed in all their finery and displayed themselves before the rest of the people, after which they danced. This festival, according to this informant, was celebrated only in seasons of plenty.

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302 They shave their heads, or rather their barbers shave them, with a shark's tooth, or shells, but now most commonly with a piece of iron hoop ground down to so sharp an edge as to remove the hair without giving much pain. The beard of the young men, and the hair under the arms of both men and women, is plucked out by means of shells, and there are certain other parts of the body where the females pay as little respect to the works of nature. The females at times, on what occasion I do not know, shave their heads close; but I am induced to believe such occasions are rare, as some wear their hair long, some cut short, and some cropped close, while others are close shaved. They have such varieties in wearing their hair, that I could not discover any fashion which seemed to prevail over the others, except among the young men, to which class it seemed wholly confined. Their custom is to put it up in two knots, one on each side of the head, and they are secured with white strips of cloth, with a degree of neatness and taste which might defy the art of our best head-dressers to equal. The old men wear it sometimes cut short, sometimes the head is shaved, and they occasionally have their heads entirely shaved, except one lock on the crown, which is worn loose or put up in a knot. But this latter mode of wearing the hair is only adopted by them when they have a solemn vow, as to revenge the death of some near relation, &c. In such case the lock is never cut off until they have fulfilled their promise. Besides the shark's tooth and iron hoop razors, they make use of a brand of fire to singe off, and shells as tweezers to pluck out the beard and hair on different parts of the body.

304 Tattooing is performed by means of a machine made of bone, something like a comb, with the teeth only on one side. The points of the teeth are rubbed with a black paint, made of burnt cocoa-nut shell ground to powder, and mixed with water. This is struck into the flesh by means of a heavy piece of wood, which serves the purpose of a hammer. The operation is extremely painful, and streams of blood follow every blow, yet pride induces them to bear this torture, and they even suffer themselves to be tied down while it is performing, in order that their agony may not interrupt the operator. The men commence tattooing as soon as they are able to bear the pain; generally at the age of eighteen or nineteen, and are rarely completely tattooed until they arrive at the age of thirty-five. The women begin about the same age; but have only their legs, arms, and hands tattooed, which is done with extraordinary neatness and delicacy. Some slight lines are drawn across their lips. It is also the practice with some to have the inside of their lips tattooed, but the object of this ornament I could never find out, as it is never seen unless they turn out their lips to show it. Every tribe in the island, I observed, was tattooed after a different fashion, and I was in-

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VOYAGE ROUND THE WORLD.

Coccol. This tree is used for firewood. It bears a black berry, which is mixed with a certain odoriferous root, and used for painting the skin yellow.

Tear. A tree of which all the implements of war are made, on account of its hardness.

[283] *Fow.* A tree of a middling size, from the bark of the branches of which threads for fishing-lines and nets are made.

[287] *Eooty.* From the bark of this tree, the best cloth is made. The manner of manufacturing it is similar to that which has been described by several navigators, as practised in the Sandwich Islands.

[293] *Eama.* The fruit of this tree answers the purpose of candles. It resembles small chestnuts, which, when peeled, stuck one upon another on a stick, and set on fire, burn in succession, and give an excellent light.

[297] *Hiaba.* A large tree, the bark of which is used for making short pieces of cloth, such as the islanders sometimes tie round the waist.

[301] *Foa.* This tree produces a very handsome fruit, pieces of which being strung together, are used, on festivals, as wreaths for the head, and ornaments for the neck.

ROOTS.

Taco. A sort of yam. Its leaves may answer the purpose of brocoli, which it resembles in taste.

415 was so heavy, however, that several men would have been required to move it
 [384] and it must have been fixed in some special place. It was said to have been used
 to dye tapa with saffron.

A third stone bowl was seen in the valley of Pua Ma'u, Hiva Oa, and is known to have been the property of the last queen of that valley. It was made of red tuffa of the sort ordinarily employed for large stone slabs, and was very roughly finished. The dimensions were as follows: diameter, 18 inches; external depth, 14 inches; thickness of rim, 3 inches. It was said by the owner to have been used to keep fire in, in the house at night, but this seems to have been an unusual practise and no other bowls of the sort were known to the natives.

A peculiar stone tray was collected in the valley of Taipi Vai, Nuku Hiva. This specimen is made of rather coarse lava, worked all over but poorly finished. The outside is decidedly asymmetrical—somewhat oblong in shape with rounded ends. One end of the tray has a curious flat projection running from a short distance below the rim down the outside of the bowl to the bottom. This projection is $5\frac{1}{4}$ inches long, $3\frac{1}{4}$ inches wide at the upper end and 2 inches wide at the lower end, at the top it is 1 inch thick, at the bottom $\frac{1}{2}$ an inch. The upper end and sides of the projection are somewhat undercut, and a shallow transverse groove runs across the lower end $\frac{3}{4}$ of an inch above its tip. The internal depression of the tray is nearly rectangular, 11 inches long, $7\frac{1}{4}$ inches wide and $\frac{3}{4}$ of an inch deep. The bottom is flat, the sides curving upward abruptly. The outer surfaces of the tray recurve slightly at the rim. The dimensions of the tray are: length, $14\frac{1}{4}$ inches; width, $9\frac{1}{4}$ inches; maximum thickness, $4\frac{1}{2}$ inches. This tray was used by its owner to grate saffron root and was described by him as an heirloom. There is good evidence, however, that he found it while clearing land only a short time before its purchase and its ancient use remains uncertain. (See Pl. I, B-C.)

The specimens described have all been of large size and rather crude workmanship. Certain fragments in the collection of the Bishop Museum, however, prove that there were in the group small and finely made stone bowls. No. B3699A is a fragment of a bowl or tray, its size being too small to make exact determination possible. The material is some soft, rather close-grained, grey stone, and the whole surface, including the fracture, is heavily patinated. The walls are about $\frac{3}{4}$ of an inch thick, and the internal depression $\frac{3}{4}$ of an inch deep at the rim. The rim is flat, and the object appears to have been finely finished on all surfaces. Another fragment (No. B3699B) is of a small circular bowl about $6\frac{1}{4}$ inches in diameter and $2\frac{3}{4}$ inches deep. The walls are $\frac{3}{4}$ of an inch thick at the rim and about $1\frac{1}{4}$ inches thick at the bottom. The outer sides recurve slightly at the rim, which is flat with rounded edges. This

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 283 The cords of the large fish net (*ti eno*) were dyed with earth
 386 called *ka'aca* which was worked into them in the course of the rolling, but apparently there was no decorative intent. Colors other than red and black do not seem to have been used. The method in dyeing the cord black was not ascertained, but it was probably the same as that used in dyeing sennit black.

Next to the *fau* bark the material in most common use is coconut fiber.
 [824] This fiber is of two kinds, that from the husk, which is short and rather stiff, and that from the leaf sheath, which is longer and more flexible, but lacks the strength of the husk fiber. Husk fiber is used for all ordinary cordage and is obtained by beating fresh moist coconut husks with stones until the tissues have been crushed and the fibers can be separated by hand. In the leaf sheath the fibers are arranged in thin layers which can easily be separated with the
 [227] fingers. Sheath fiber is said to have been employed for the large nets used in turtle fishing, and for the lashings of some chiefs' houses and sacred structures. It was also occasionally used for the thin cord employed in *parahina* and as
 [534] strings for musical bows.

The heavier grades of coconut fiber cord are usually plaited, but the smallest cord is twisted from two strands while a somewhat heavier twisted cord, in a single strand, is used in one form of ornamental plaiting. Ordinary cord (Pl. LXV, D 1) was made by plaiting three untwisted strands of fiber, additional fibers being worked in as the plaiting progressed to keep the strands of uniform size.

The plaiter seated himself and, holding the end of the cord with his toes, plaited upward and away from the body. The ornamental cords used for *hue* nets and drum lashings were plaited from many strands—five, six, eight, and from nine to fifteen inclusive. They appear to have been always in the form of flat ribbons, and it is rather curious that no square four-strand coconut fiber plaits were seen although this technique was employed for some bark ropes.

Two forms of plaiting were used, one of which gave a broad thin band having the appearance of twilled fabric (Pl. LXV, D, 3), while in the other the strands ran in diagonally to the center of the band, where they passed alternately over and under (Pl. LXV, D, 2). The ends of cords made by the first technique were usually finished by short sections made by the second. In large cords made by the second technique two longitudinal strands of twisted fiber were usually used as a base, the strands of the plait passing alternately over and under these in a sort of figure eight motion. In well made cords of this type the base strands were completely covered, and the finished product gave the effect of being made from two cords tightly twisted in opposite directions and placed side by side. Many strand cords made by plaiting together elements which were themselves plaited do not appear to have been used.

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Finished three plait cord is stored in long cylindrical rolls wound to give an ornamental effect. Many strand cord on the other hand is said to have been commonly wound in thin flat rolls like European tape. (See Pl. LXV, B.) 283

The only dyed coconut fiber cord collected was of the three strand variety, but it is probable that the more intricate plaits were also occasionally colored. All the specimens seen were reddish brown, tan or black, but red is mentioned in native stories and Stewart, a reliable authority, speaks of yellow and white sennit used in house lashings. The reddish brown and tan sennit appears to be natural. The Tongan method of deepening the color by baking, if originally known to the natives, has been forgotten. The lightest shade of tan sennit was made from fiber of the leaf sheath. Three methods of coloring the black sennit were described. 283 386

The bark of the *ma'i* tree was beaten up with stones and the juice squeezed into large wooden bowls. The finished sennit was then steeped in the juice for several days, until it became black. It was then removed and buried for three days in the mud of a taro patch, washed, and dried. A second method consisted of burying it in the mud for a longer period without the preliminary dyeing, while a third method consisted of rubbing the finished cord with a mixture of *ama* nut soot and water.

It seems probable that when mention is made to red sennit the darker shades of red brown are referred to, but at least some red sennit was made by painting the fiber, apparently after plaiting, with the seeds of the *arnotto* (*Bixa orellana*). Yellow sennit was colored with saffron, the cord probably being made from the light colored fiber of the leaf sheath. White sennit must, from the nature of the fiber, have been incrustated or painted rather than dyed, and it is quite possible that it was produced by rubbing the finished cord with a paste made from shell lime or from a fine white earth, extensive deposits of which occur in Nuku Hiva. This supposition is strengthened by the fact that fans were whitened in this way.

Although most Marquesan cordage was made from either *fau* bark or coconut fiber a number of other fiber plants were known and used. The most important of these seems to have been the pineapple. Pineapple fiber is still used for thread and for very small fish lines, and is prepared as follows: 283 824

The fresh green leaves are taken one by one, laid across a banana log, and scraped longitudinally with any sharp-edged instrument. The bowl of an ordinary metal spoon was seen used for this purpose. Continued scraping removes all the flesh of the leaf, leaving a few soft fibers which are then dried in the sun. The women convert these fibers into thread by rolling them upon the bare thigh with the palm of the hand. To make fish lines either two or three strands of this thread are twisted together, the finished line being passed rapidly through a flame to singe off the lint.

Banana fiber is said to have formerly been used for certain kinds of cord, but this material has not been employed for many years. To prepare the fiber.

- 287 paper pulp and in this condition it was very easily injured. This pulp was then wrapped in very large leaves (apparently from a species of *Caladium*) and taken into the house, where it was kept for two or three days. There was no fixed period for this storage, the time depending upon the condition of the pulp. After this "ripening" the pulp was beaten again with a square beater on a wooden anvil, rinsed in fresh water, and spread out to dry, the edges weighted with stones. The finished tapa was made up in large bundles which were hung from the ridge pole of the house until needed. (See Pl. LXXIV, C.)

A slightly different method of making tapa from breadfruit bark is described in a manuscript translated by Handy.

This account states that the bark was cut with a stone knife, peeled from the branches of a living tree with the teeth, beaten on a stone anvil for a long time, crushed and worked in fresh water, and done up in bundles to ripen. After ripening for four days, the pulp was beaten again on a stone anvil and finally on a wooden anvil.

An informant of Nuka Hiva said that in the final stages of manufacture layers of mulberry and breadfruit bark were frequently laid upon one another and beaten into a single piece, the upper side of which would be of one material, the other side of another. Used tapa was sometimes rebaten.

- Some of the tapa collected has evidently been oiled, although it is not certain that this was done with the intention of making it waterproof. The Bishop Museum possesses a tapa, ascribed to the Marquesas, one side of which is covered with a dark red glaze, but as there is no other evidence that this process was used in the Marquesas the specimen probably is improperly ascribed. Much white tapa was dyed yellow with a solution of saffron. Jardin (33) says he was told that the natives extracted a blue dye from the leaves of a species of *Cordia*, and adds: "I have never seen this practice and I have never seen their cloth dyed that color."

- 287 An interesting feature of Marquesan tapa is the use of the watermark of the ordinary grooved beater to produce ornamental effects. One specimen 366 has been beaten with such skill that at first glance it appears to be cloth woven with heavy weft and light warp threads. The ridges and grooves made by the beater extend across it in continuous lines except for a narrow strip along either edge, which is beaten at right angles to the body of the piece, giving the appearance of a border. Another specimen seems to have been beaten with alternate strokes from right and left so that the watermarks cross each other and produce a series of small diamonds. Designs were never painted on Marquesan tapa.

- 287 The importance of tapa making in the life of the Marquesans is indicated by the many terms in use. The following have been taken from Dordillon's Dictionary:

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be worn with the knot either on the breast or on one shoulder. According to Han-291
dy the festive dress of the women consisted of a strip of tapa as much as thirty or
forty meters long which was wrapped round and round the wearer, giving an effect
not unlike an European hoop skirt. In some cases it was doubled and plaited around
a hoop which hung from the hips. This custom of wearing great quantities of tapa
has also been described from Hawaii and the Society Islands. It is rather inter-
esting that the poncho-like upper garment worn in the Society Islands seems to
have been unknown in the Marquesas.

TATTOOING

The Marquesans surpassed all other Polynesians in the excellence and ex-304
tent of their tattooing. In men the entire person, even to the crown of the head, was
covered with intricate and beautiful designs. Women were tattooed on the arms,
legs and shoulders, but not on the body. The facial tattooing of women was
limited to a series of short lines on the lips and a small figure behind the lobe of
the ear. The present natives deny that the genitals were tattooed, but a draw-
ing in the prospectus of Von den Steinen's book on Marquesan art indicates that
this was sometimes done on women.

The tattooing was done with bone combs.

The larger combs were made from the bones of revenge victims, *heano*, the smaller combs
of bird bones. In Hiva Oa at least smaller tattooing combs were made from the bones of
tapu birds caught on Fatu Huku. The combs are roughly triangular in outline, with
rounded apexes and slightly convex edges. Unfinished specimens show that they were shaped
and ground to a sharp edge before the teeth were cut. The cutting of the teeth is said to
have been done with a sliver of bamboo. The largest comb collected is about 3 inches long
and $\frac{1}{2}$ inch wide at the base, with a maximum width of about $\frac{3}{8}$ inch, and a thickness of
 $\frac{1}{16}$ th of an inch. The smallest, made of bird bone, is about $2\frac{1}{2}$ inches long, with a base
width of $\frac{1}{10}$ of an inch and a maximum width of about $\frac{1}{5}$ of an inch. The teeth range in
length from $\frac{1}{8}$ to $\frac{1}{5}$ of an inch and vary in number from 3 to 18, according to the width
of the comb. The lower edge of several of the combs is convex rather than straight so that
the incisions made must have been deepest in the middle. This is not a constant feature and
was probably accidental. The larger combs were used to fill solid space in the designs, the
smaller, in working out curves and details. (See Pl. LXXV, A, 2.) 304
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According to informants in Hiva Oa, the combs were provided with temporary handles
made from joints of upland reed, in which small transverse slots were cut for the insertion of
the upper end of the comb. When not in use the handles were discarded and the combs stored
in short joints of bamboo (Pl. LXXV, A, 3). The complete implement looked like a minia-
ture adz from four to six inches long. In Nuka Hiva a more permanent form of handle
seems to have been used, the blade being attached by ornamental lashings of very thin sennit.

The pigment used in tattooing was made from soot or from pulverized char-304
coal, mixed with water to form a thick ink. 386

In making the soot pigment, which was considered the best, a flat water-worn stone was
propped up on three other stones in such a way as to leave a small space beneath it. Three
strings of candle nuts, strung on sennit, were then tied together in a bunch, lit, and thrust under

304 the flat stone. There were twenty nuts in each string, although the reason for this was
 386 unknown to the informant. The soot which collected on the under side of the flat stone was
 scraped off and packed in a small coconut shell (Pl. LXXV, A, 1). To make the charcoal pig-
 ment, coconut charcoal was pulverized with a small stone pounder. For this purpose smooth
 circular pits, common in large stones near villages, are said by natives to have been used as
 mortars. These pits are so numerous, however, that they must have been used for other pur-
 poses as well.

304 In tattooing, the mounted comb was held in the right hand, and a tapping
 stick of *toa* wood, about one foot long, in the left. A tapa rag was wrapped
 around the last two fingers of the right hand. The designs to be tattooed were
 usually drawn on the body in charcoal, but the most experienced artists frequently
 worked free hand. The comb was dipped in the ink and driven into the skin by a
 sharp blow from the tapping stick, the coloring matter running down the teeth
 into the wound. After each stroke the blood was wiped away with the rag.

The body was tattooed in sections, three days being allowed between oper-
 ations for the healing of the wound. The texture of the skin does not seem to
 have been greatly altered by the operation, and flesh carving of the sort done by
 the Maori was unknown. The process was a long and painful one.

The many social and ceremonial observances connected with the tattooing
 of men, and especially of chiefs' sons, are described by Handy (32). A dis-
 cussion of the practice of tattooing and of the designs used has been published by
 Willowdean C. Handy (32 a).

MUTILATIONS

The bodily mutilations practiced by the Marquesans were circumcision (32),
 the piercing of the ears and depilation.

The natives of both sexes pierced the ears for the attachment of orna-
 ments. The operation was performed with a special awl-like instrument. The
 favorite material for these instruments was human bone, but bird bone and even
 tortoise shell were sometimes used. Practically all ear piercers were carved at the
 upper end, the decorations consisting for the most part of conventionalized human
 faces or figures. (See Pl. LXXV, B.) Many specimens have a loop of sennit perma-
 nently attached to the upper end, while almost all are drilled for suspension.
 Such piercers were treasured in families as heirlooms, but seem to have no re-
 ligious significance.

The ear aperture was somewhat larger than in pierced European ears, be-
 ing $\frac{1}{4}$ to $\frac{1}{2}$ of an inch in diameter, but dilation of the ear lobe does not seem to
 have been practiced. Some of the men's ear ornaments strongly suggest ear plugs,
 however, and it is possible that dilation of the ear lobe, common in Melanesia, was
 at one time practiced in the Marquesas. If so, it had become obsolete before the
 historic period, as it is not mentioned by any of the early writers.

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Pani was used only on the hair, the body being anointed with *pao panu*, 302
coconut oil scented with sandalwood.

BODY PAINTING

Persons of both sexes painted the entire body yellow, but the use of other 302
colors, or of painted designs, seems to have been unknown. The principal source 386
of the pigment was the root of the turmeric which was cultivated for this pur- 824
pose. In Hiva Oa this is called *cna*, but Dordillon gives the word *kotohi*, which he [249]
translates as "root of turmeric which is planted." The turmeric root was dried,
grated, and mixed with coconut oil to form the paint. The natives still stain their
faces and hands with the fresh root as a protection against insects. Several other
plants seem to have been used for body painting, all of which yielded a yellow dye.
Langsdorff (38, p. 114) also says that in Nuku Hiva both sexes painted them-
selves with the sap of *Thespesia populuca* mixed with coconut oil. Jardin (33,
pp. 32-59) says that the juice of *Sinapis nigra* was used to stain the body. He also
says that a much prized yellow dye, used for both body painting and tapa dyeing,
was obtained from a species of animum (*Curcuma longa*) which grew in a
single locality—a place called Muake in the interior of Nuku Hiva. The roots of
this plant were prepared by a secret process and the dye was sold in powdered
form. The name which Jardin gives for this plant, *eka*, is the Nuku Hivan equiv-
alent of the Hiva Oan word *cna*, but it seems certain that the *eka* root of Nuku
Hiva was not the turmeric (*cna*). It was probably this substance which was an
article of trade in ancient times, and which was so highly prized by the natives of
Hiva Oa that they sent two large canoes to Nuku Hiva in exchange for it.

SKIN BLEACHING

White skin was greatly admired by the Marquesans, and it is mentioned as 302
a beauty feature in some of their legends. They had discovered a process for tem-
porarily bleaching the skin, so that immediately after treatment they were almost
as light as southern Europeans. The earliest account of the process is given by
Langsdorff (38 pp. 113-114), who says:

The manner in which it [bleaching] is done is to rub the whole body with sap extracted
from the leaves of three different plants called here *epapa*, *hoko-kuh* and *ohuc*. The skin be- [824]
comes at first entirely black, and for four or five days the person undergoing the operation
cannot leave the house: they then wash themselves well with fresh water which takes off the
black sap and leaves the skin its natural, nearly white color.

The account obtained by Handy differs somewhat from this. The body, and
especially the face, was first painted with *cna* and coconut oil. Over this was
smeared the juice from the crushed leaves of the *kokuu* tree or *papa* vine. This
gave the skin a green color. The person undergoing the operation stayed in the

8: Handy T-5 (1920-1921) 1922 OX6 Marquesas OX6

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Bernice P. Bishop Museum—Bulletin

^x304 Before the coming of 'he *tuhuna*, the father of the *opou* had prepared the pigment (*hinu*). The preparation of this was a very *tapu* operation, the man making it being forbidden all relationship with women during the period; and, according to Lesson (1, p. 107-108), it was necessary for a virgin to aid him in the work. The shells of the *ama* nut (*Aleurites triloba*) were heated so as to open easily (7, p. 45), and the kernels placed over a fire in a kind of pocket of stones which allowed the smoke to ascend through a small passageway in order to collect on a smooth stone (*pa'e hinu*). Upon this stone a constant tapping was kept up while the soot collected to the depth of about an inch. This process, according to Berchon, was called *amahi ama*. The soot-covered *pa'e hinu* was then placed on a banana leaf and left in the sun to dry, being kept thus until the *tuhuna* arrived for his work. Thereupon, the father, according to present-day information, mixed the soot with plain water in a small coconut shell (*ipu hinu*) and gave it to the artist. Marchand Langsdorff, and Porter agree upon water as the solvent; but Berchon further reports that the ink, which he calls *kaahi*, was made by mixing the soot with coconut oil; while Melville (13, p. 246) gives vegetable juice as the liquid. He and Langsdorff describe the use of the ashes, rather than the soot, of this nut kernel, and Porter thought burnt and powdered coconut shell was used, but apparently no other pigment save carbon was ever employed in the Marquesas, as all early voyagers remark only the dark blue or blackish coloring. (See 15, p. 16; 14, p. 78; 10, p. 118; 8, p. 155; 13, p. 158). Jardin (7) speaks of carbonizing and pulverizing the kernels of the *ama* and mixing the powder with water to trace the designs on the body, and it may be that the residue of the burnt nuts was so used.

^x304 When the *tuhuna* arrived, bringing his instruments in a bamboo case
413 seven or eight inches long (*pukohe sau hinu*), stoppered with a wad of *tapa*, he spread them out upon a piece of *tapa* on the ground, ready for use. The instrument is generally known as *ta* (to strike), but Berchon (1, p. 110) gives the following nomenclature for its various parts: *ta'a* (a point) for the toothed end, *kakaho* (reed or cane) for the horizontal support of the teeth, and *ta-tiki* (strike-tiki) for the baton (Berchon, p. 110). There was always an assortment of these toothed ends of varying fineness or coarseness appropriate for all grades of work from the delicate hair lines to solid patches. The flat instruments for straight lines and gradual curves were of human bone, sometimes of the bones of enemy sacrifices (*ini heana*). They were about three inches long, flat and slightly wedge-shaped, and toothed or comblike at the end. Instruments for the smaller curves were of the bones of the *kena* (*Sula piscatrix*),

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designs. The people took delight in fine craftsmanship and great pride in perfection. A master worker enjoyed much prestige. [467]

There was sharp sex distinction in the manufacturies, women being of minimum importance. They could make mats, baskets, fans, and bark cloth, but only about fifteen percent of the articles used by the tribe were made by women. A man could use mats or baskets made by a woman, but he could not wear bark cloth that had been made by a woman not related to him by blood. Even a wife was barred by this taboo, so that when a woman did make bark cloth, it was for the use of her brother or nephew, not her husband. This was the only place in Polynesia where the natives had no decoration on their bark cloth; they merely dipped it occasionally in saffron to dye it yellow. All the women's handiwork was similarly crude and simple. 462

The men's work, in contradistinction, was of tremendous economic importance. All the production of food, with the exception of gathering shellfish, done by both sexes, was men's work. Men built the houses, made the cooking utensils, did their own cooking, and not infrequently cooked for the entire household. In short, men were in complete charge of the economic situation. [531] [386]

MASTER CRAFTSMEN

The institution of master craftsmen was saliently characteristic of Marquesan culture. All men knew how to make everything that they needed, but the degree of skill differed and there was great respect for experts. The master craftsman was a person of importance and had the opportunity to accumulate wealth. 467

At the upper end of the scale of master craftsmen were the house and canoe makers, who were also organizers and directors, and the artists, who were master carvers. These *tuhungas* worked mostly on order; they joined the employer's household, received food during the time they were working on a job, and were presented with a liberal gift on departure. The *tuhunga* could afford to be temperamental, for because of the peculiar religious sanctions, no other man could carry on a job which [466]